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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,963	01/14/2004	Alexei Brooun	SYR-MVAS-5001-U	5717

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EXAMINER

SKIBINSKY, ANNA

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/757,963	Applicant(s) BROOUN ET AL.	
	Examiner Anna Skibinsky	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-51 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, drawn to a method for displaying a 3D representation of a structure of a protein by superimposing alpha-carbon atom positions of a set of structures.

Group I is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species A specie election is required.

- II. Claims 6-10, drawn to a method for displaying a 3D representation of a structure of a protein, using a computer to model the surface contour by computing coordinates and comparing the surface contour to the structure coordinates.

Group II is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species B specie election is required.

- III. Claims 11-15, drawn to a computational method by superimposing a set of structure coordinates, computing phases bases on the structural coordinates, computing an electron density map based on the computed phase, and determining a 3D crystal structure based on the computed electron density map.

Group III is classified in class 702, subclass 19.

Art Unit: 1631

If this Group is chosen, the below listed Species C specie election is required.

- IV. Claims 16-21, drawn to a computational method involving x-ray diffraction measurements of a target protein, superimposing the alpha-carbon atom positions of each set of structure coordinates and determining a 3D crystal structure based on a computed 3D electron density map.

Group IV is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species D specie election is required.

- V. Claim 22-26, drawn to a method for evaluation a potential of an entity to associate with a protein, involving the superposition of structure coordinates, performing a fitting operation to quantify an association between the entity and the computer model.

Group V is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species E specie election is required.

- VI. Claim 27-31, drawn to a method for evaluation a potential of an entity to associate with a protein, involving the computation of a surface contour and fitting the surface contour to the entity to quantify the association.

Group VI is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species F specie election is required.

- VII. Claims 32-36, drawn to a method for identifying potential agonists, involving the superposition of the alpha-carbon atoms positions of structure coordinates, employing a 3D structure to select the agonist or

Art Unit: 1631

antagonist and contacting the agonist or antagonist with a protein having at least 55% identity with SEQ ID NO. 1.

Group VII is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species G specie election is required.

VIII. Claims 37-41, drawn to a method for identifying potential agonists, involving the computation of a surface contour, employing a 3D structure to select the agonist or antagonist and contacting the agonist or antagonist with a protein having at least 55% identity with SEQ ID NO. 1.

Group VIII is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species H specie election is required.

IX. Claims 42-46, drawn to a method for evaluating the ability of an entity to associate with a protein involving the construction of a computer model where the alpha-carbon atom positions of each set of structure coordinates are superimposed.

Group IX is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species I specie election is required.

X. Claims 47-51, drawn to a method for evaluating the ability of an entity to associate with a protein involving computing a computer model having a surface contour and comparing the surface contours based on the alpha-carbon atoms in the protein modeled and amino acid residues in Table 2.

Group X is classified in class 702, subclass 19.

If this Group is chosen, the below listed Species J specie election is required.

Groups I through X are distinct inventions because they are directed toward different functions and divergent method steps as summarized above. The groups qualify as distinct inventions and are subject to restriction. Each method uses differing data in differing calculations to obtain differing answers. Each method requires a differing search strategy in differing types of patent and non-patent literature. As such, searching all 10 independent and distinct inventions would pose an undue search burden upon the examiner if not restricted. I.e., a search for methods of evaluating protein-ligand binding of Group IX would not be illuminating for claims drawn to methods of 3D modeling by alpha-carbon superimposition. Thus the subject matter of Groups 1 to X are distinct and search for the Groups together would be an undue search burden as they are directed to systems and/or methods that are generally separate in chemical information analysis.

This application contains claims directed to the following patentably distinct species in the claimed invention:

Specie Election Regarding Group I

Species (A):

Species of root mean square deviation distances and criteria for measurement are cited in claims 2-5 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to

Art Unit: 1631

select an unspecified analytical characterization for the root mean square distance or one listed in claims 2-5.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic to the above species.

Specie Election Regarding Group II

Species (B):

Species of root mean square deviation distances and criteria for measurement are cited in claims 7-10 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to select an unspecified analytical characterization for the root mean square distance or one listed in claims 7-10.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 6 is generic to the above species.

Specie Election Regarding Group III

Species (C):

Species of root mean square deviation distances and criteria for measurement are cited in claims 12-15 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to

select an unspecified analytical characterization for the root mean square distance or one listed in claims 12-15.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 11 is generic to the above species.

Specie Election Regarding Group IV

Species (D):

Species of root mean square deviation distances and criteria for measurement are cited in claims 17-21 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to select an unspecified analytical characterization for the root mean square distance or one listed in claims 17-21.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 16 is generic to the above species.

Specie Election Regarding Group V

Species (E):

Species of root mean square deviation distances and criteria for measurement are cited in claims 23-26 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to

Art Unit: 1631

select an unspecified analytical characterization for the root mean square distance or one listed in claims 23-26.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 22 is generic to the above species.

Specie Election Regarding Group VI

Species (F):

Species of root mean square deviation distances and criteria for measurement are cited in claims 28-31 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to select an unspecified analytical characterization for the root mean square distance or one listed in claims 28-31.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 27 is generic to the above species.

Specie Election Regarding Group VII

Species (G):

Species of root mean square deviation distances and criteria for measurement are cited in claims 33-36 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to

Art Unit: 1631

select an unspecified analytical characterization for the root mean square distance or one listed in claims 33-36.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 32 is generic to the above species.

Specie Election Regarding Group VIII

Species (H):

Species of root mean square deviation distances and criteria for measurement are cited in claims 38-40 which are separately analyzed and published; and thus document an undue search burden if searched together. Applicants are required to select an unspecified analytical characterization for the root mean square distance or one listed in claims 38-40.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 37 is generic to the above species.

Specie Election Regarding Group IX

Species (I):

Species of root mean square deviation distances and criteria for measurement are cited in claims 43-46 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to

select an unspecified analytical characterization for the root mean square distance or one listed in claims 43-46.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 42 is generic to the above species.

Specie Election Regarding Group X

Species (J):

Species of root mean square deviation distances and criteria for measurement are cited in claims 48-51 which are separately analyzed and published, and thus document an undue search burden if searched together. Applicants are required to select an unspecified analytical characterization for the root mean square distance or one listed in claims 48-51.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 47 is generic to the above species.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim

is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

Art Unit: 1631


remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Skibinsky whose telephone number is (571) 272-4373. The examiner can normally be reached on 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MARY K. ZEMAN
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1/11/06